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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|----------------------|---------------------|------------------|
| 10/070,826 | 06/03/2002 | Brian Wilson | 687-104 | 9545 |
| 23117 | 7590 | 06/24/2004 | EXAMINER | |
| NIXON & VANDERHYE, PC 1100 N GLEBE ROAD 8TH FLOOR ARLINGTON, VA 22201-4714 | | | CHANG, VICTOR S | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 1771 | |

DATE MAILED: 06/24/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/070,826

Applicant(s)

WILSON ET AL.

Examiner

Victor S Chang

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 February 2004 and 30 April 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) 2,4-11,13,14,16 and 18-25 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3,12,15 and 17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 March 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 5/31/02, 8/20/02.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Applicant's election of Group I and Composition Species E in the reply filed on 2/9/2004, and further election of Structural Species of a support material impregnated with a material in the reply filed on 4/30/2004 are acknowledged. As such, claims 1, 3, 12, 15 and 17 with moieties of unit I and III are elected, and claims 2, 4-11, 13, 14, 16 and 18-25 are withdrawn as nonelected. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)). Additionally, it is noted that Applicants have not yet amended claim 1 accordingly, and should do so with his next response. Further, duplicate claims should be cancelled.

The requirement is still deemed proper and is therefore made FINAL.

Specification

2. First paragraph of the application should include a cross-reference to related application. For example, the related US Application No. 10/239,138 should be cross-referenced, vice versa.

It should be noted that while an applicant is not required to refer to applications which is not copending in an application data sheet or in the specification of the later filed application, but is required to otherwise call the examiner's attention to the earlier

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application if it or its contents or prosecution are material as defined in 37 CFR 1.56(b).

See MPEP § 201.11. See also MPEP § 704.11(a).

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 1, 3, 12, 15 and 17 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 1, line 3, the transition term "having" appears indefinite, because it is unclear whether it is an "open" or "close" clause. For the purpose of this Office action, it is presumed to be "comprising". Clarification is requested.

In claim 17, the term "electroylser" is vague, indefinite and confusing. Since it appears to be a typo, appropriate correction is requested. For the purpose of this Office action, it is presumed to be "electrolyte".

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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6. Claims 1, 3, 12, 15 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over EP 0 932 213 in view of JP 06-029032.

EP '213 is directed to a polymer electrolyte (conductive polymer) comprising a sulfonated polymer (functionalized) having an ion-exchange group comprising structural unit represented by formula (I) and (II) (Abstract), which read on instantly claimed structural moieties I and III of Species E.

For claims 1, 12 and 17, EP '213 lacks an express teaching that the polymer electrolyte film is a composite membrane comprising a porous support material. However, EP '213 does expressly teaches that when a polymer electrolyte is used for a fuel cell, it is normally used in the form of a film, which is formed from a solution state or molten state (paragraph 0020). Further, it is known art that a polymer electrolyte film can be form by impregnating a porous support, as evidenced by the state of the art JP 06-029032, which is directed to a high polymer electrolyte film. JP '032 expressly teaches that forming the film by impregnating an ion exchange resin in the pores of the porous film prolongs the lifetime of the film (Abstract). As such, it would been obvious to one of ordinary skill in the art to modify EP '213 to form a composite polymer electrolyte film with a porous support, as taught by JP '032, motivated by the desire to obtain a durable polymer electrolyte film.

For claim 3, EP '213 is silent about the crystallinity of the conductive polymer. However, it is noted that EP '213 teaches essentially the same conductive polymer as instantly claimed invention. As such, it is believed that the crystallinity of the conductive polymer is an inherent property of the polymer. It should be noted that where the

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claimed and prior art products are identical or substantially identical in structure or composition, or are produced by identical or substantially identical processes, a *prima facie* case of either anticipation or obviousness has been established. See MPEP § 2112.01.

For claim 15, EP '213 expressly teaches that the polymer electrolyte has an equivalent weight of 500 to 2500 g/mol.

Finally, the Examiner notes that in claim 1, the recitation "the phenyl moieties ... optionally substituted and optionally crosslinked" renders aforementioned elements optional, and there is no requirement for the prior art to provide or account for them. As such, it does not constitute a limitation in any patentable sense. See MPEP § 2106.

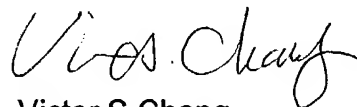
Similarly, the recitation "m, r, s, t, v, w and z independently represent zero or a positive integer" also renders each associated molecular segment optional, and does bear any patentable weight.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Victor S Chang whose telephone number is 571-272-1474. The examiner can normally be reached on 8:30 - 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Terrel H Morris can be reached on 571-272-1478. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Victor S Chang
Examiner
Art Unit 1771

06/11/04